

## Patent claims

1. An immunogen derived from a protein allergen,  
**characterized** in that said immunogen comprises:
- 5 a non-anaphylactic immunogenic recombinant fragment of  
the protein allergen, said fragment containing an IgG  
epitope partly but not wholly overlapping an IgE  
epitope of the protein allergen
- b. a polymeric form of said fragment, in which form the  
10 fragment constitutes the monomeric units;
- c. a recombinant polymeric form of said protein allergen  
in which the protein allergen constitutes the monomeric  
units.
- 15 2. The immunogen according to claim 1, **characterized** in  
that the polymeric form of said fragment is recombinantly  
produced.
3. The immunogen according to anyone of claims 1-2,  
20 **characterized** in that said monomeric units are separated  
from each other by a oligopeptide linker, typically  
consisting of 1-30 amino acid residue that may be  
hydrophilic.
- 25 4. The immunogen according to anyone of claims 1-3,  
**characterized** in that said immunogen also contains a  
carrier for the fragment in (a) and the polymeric forms in  
(b) and (c), respectively.
- 30 5. The immunogen according to any of claims 1-4,  
**characterized** in that the protein allergen is Bet v 1.
6. The immunogen according to claims 1-5, **characterized** in  
that it is according to (b) or (c) in claim 1.
- 35 7. The immunogen according to claim 6, **characterized** in  
that the number of the monomeric units is an integer 2-10.

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8. The use of the immunogen according to any of claims 1-5 for the in vitro diagnoses of type I allergy in a mammalian individual.

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9. The use according to claim 8, **characterized** in that the immunogen is according to (b) and (c) in claim 1.

10. The use according to claim 9, **characterized** in that the number of monomeric units are an integer selected from 2-10.

11. The use of the immunogen according any of claims 1-5 for the preparation of a medicament to be used in the hyposensitization of a mammalian individual suffering from a type I allergy or for the preparation for a reagent to be used in diagnoses in vivo of type I allergy.

12. The use according to claim 11, **characterized** in that the immunogen is according to (b) and (c) in claim 1.

13. The use according to claim 12, **characterized** in that the number of monomeric units are an integer selected from 2-10.

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14. Method for the hyposensitization of a mammal suffering from IgE mediated allergy against a protein allergen, comprising the step of presenting the immune system of the mammal in vivo to an effective amount of an immunogen hyposensitizing the mammal against the allergen, **characterized** in that the immunogen comprises

- a. a non-anaphylactic immunogenic recombinant fragment the protein allergen, said fragment containing an epitope partly but not wholly overlapping an IgE epitope of the protein allergen;
- b. a polymeric form of said fragment, in which form the fragment constitutes the monomeric units;

c. a recombinant polymeric form of said protein allergen in which the protein allergen constitutes the monomeric units.

5 15. The method according to claim 14, **characterized** in that the the immunogen is a polymeric form of said fragment and is recombinantly produced.

16. The method according to anyone of claims 14-15,  
10 **characterized** in that the immunogen is a polymeric form and that said monomeric units are separated from each other by a oligopeptide linker, typically consisting of 1-30 amino acid residue that may be hydrophilic.

15 17. The method according to anyone of claims 14-16, **characterized** in that said immunogen also contains a carrier for the fragment in (a) and the polymeric forms in (b) and (c), respectively.

20 18. The method according to anyone of claims 14-17, **characterized** in that the protein allergen is Bet v 1.

19. The method according to anyone of claims 14-18, **characterized** in that the immunogen is according to (b) or  
25 (c) in claim 1.

20. The method according to claim 19, **characterized** in that the number of monomeric units is an integer 2-10.

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